IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

AMPEX CORPORATION, Plaintiff, v. EASTMAN KODAK COMPANY, ALTEK CORPORATION and CHINON INDUSTRIES, INC., Defendants.	)	C.A. No. 04-1373-KAJ **REDACTED**

DECLARATION OF RICHARD JOHN TAYLOR IN SUPPORT OF DEFENDANTS' ANSWERING BRIEFS TO AMPEX CORPORATION'S MOTIONS FOR SUMMARY JUDGMENT

1. I make this declaration in support of Defendants' Answering Briefs in Opposition to: (i) Ampex Corporation's Motion for Partial Summary Judgment that U.S. Patent No. 4,821,121 Is Not Anticipated; (ii) Ampex Corporation's Motion for Partial Summary Judgment that U.S. Patent No. 4,821,121 Is Not Invalid For Obviousness; (iii) Ampex Corporation's Motion for Summary Judgment that the Quantel Paint Box Is Not Prior Art under 35 U.S.C. § 102(a) and 102(b); and (iv) Ampex Corporation's Motion for Summary Judgment that U.S. Patent No. 4,821,121 Is Not Unenforceable Due to Alleged Inequitable Conduct.

2. I have been retained as an expert in this litigation by counsel for Defendants, Eastman Kodak Company ("Kodak") and Altek Corporation ("Altek").

3. I served as the Executive Chairman of Quantel Limited ("Quantel") for sixteen years, until my retirement in February 2006. Quantel is a company that designs,

manufactures, and sells digital imaging processing products for the television broadcast and movie industry. I have worked in the field of digital image processing for the last thirty-eight years.

4. I received an Honours Bachelor of Science degree in Electrical Engineering in 1967 from Manchester University. In 1970, I received my Masters Degree in Electronics from London University.

5. Between 1967 and 1975, I worked in the research laboratories at Electrical & Musical Industries (EMI) outside of London. EMI was involved in a wide range of activities. They were involved in the design and manufacture of broadcast television equipment, including one of the world's first colour television cameras. They were involved in record productions, including production for famous bands like the Beatles. They were also involved in radar and target recognition systems for military use.

6. My work at EMI was related to digital image processing in the field of pattern recognition. Amongst other projects, we developed techniques for the automatic registration of colour TV cameras. The red, green and blue component images have to be aligned perfectly to make a colour picture without blurring of the images. This was formerly a manual process and we developed a system that did this automatically. The technology detected alignment errors from a colour picture before they were visible to the naked eye. This involved digital imaging techniques to recognise errors in the picture, calculate the correction and feed it back into the camera circuit. I went on to work in digital image processing for additional applications, including the world's first digital standards converter for an airborne infra-red camera.

7. In 1975, I left EMI to join Quantel. I joined Quantel as the Managing Director and Chief Executive. Our aim was to exploit digital processing techniques in broadcast television. At that time, computers were used to schedule programmes but not to process the pictures used during programmes. We set out to bring digital imaging techniques to those pictures. We wanted not only to replace the original non-digital process but open new creative possibilities in broadcast television using digital image processing.

8. In 1975, we designed a general purpose image processing system which, among other functions, was capable of changing the size of images. In 1977, we made the world's first practical electronic zoom machine. It was used by ABC extensively at the Lake Placid Olympics in 1980 to capture and manipulate images of skiers, skaters and other athletes competing. Over the subsequent twenty-five years, we developed a large number of systems for the broadcast industry including still stores, painting graphics equipment, and editing systems, some of which are discussed in more detail below.

9. From the mid-1970s to the mid-1980s I helped to design all of Quantel's products which covered a wide range of television broadcast applications. I helped to design products that could, among other things, change image size. I also helped to design Quantel's electronic still store and graphics products including, among others, the Digital Library System, or DLS 6000 series systems, including the DLS 6030 system, and the DPB 7000/1 ("the Paint Box").

10. In 1989, I took up the role of Executive Chairman of Quantel, a title and role that I held for sixteen years.

11. I have received a number of awards and honours over the course of my career. In 1981, I received the Montreux Gold Medal for achievement in television engineering. In 1982, in the New Year's Honours List, I was awarded the OBE for services to export. The OBE is a medal awarded by Her Majesty the Queen, similar to medals awarded by the United States Congress.

12. In 1985, I was the recipient of the Royal Television Society's Gold Medal in the UK, and the David Sarnoff Gold Medal Award from the Society of Motion Picture and Television Engineers in the USA. In 1987, the Eduard Rhein Stiftung in Berlin awarded me the Eduard Rhein Prize.

13. Quantel also received a number of awards for its products during my tenure. Quantel received nine Queen's Awards for technical innovation, nine Emmy Awards from the National Academy of Television Arts and Sciences, a Tobie Award from the Electronics Industry, three Monitor Awards from the Videotape Producers Association in the United States, an Industry Service Award from the Broadcast Designers Association and finally the MacRobert Award for Innovations in Engineering, the UK's most prestigious award for engineering.

14. I am an Honorary Fellow of the British Cinematograph & Television Society. I am a Fellow of the Institute of Electrical Engineers in the UK, a Fellow of the Society of Motion Picture & Television Engineers, and a Fellow of the Royal Television Society in the UK.

15. Over the years, I have written and presented many papers on digital imaging processing at industry functions. I am listed as the sole or joint inventor on

twenty-four patents and patent applications relating to various features of Quantel's products.

16. Based on my experience in the art and the materials I have reviewed in connection with this litigation, it is my opinion that a person of ordinary skill in the art as of the application date of the '121 patent would be an individual with a bachelor's degree or the equivalent in electrical engineering or computer science and a few years of work experience relating to image capture, processing, and/or display.

17. In this litigation, I expect to testify regarding my opinion that the '121 patent is invalid in light of the prior art. Specifically, I expect to testify regarding my opinion that each of the Quantel Paint Box system and the Quantel Digital Library System ("DLS 6030") separately disclosed all of the elements of the asserted claims of the '121 patent. I also expect to testify regarding my opinion that the Ampex AVA system disclosed most of the elements of the asserted claims of the '121 patent (and, in fact, all of the elements under Ampex's proposed claim construction).

18. I further expect to testify regarding my opinion that the asserted claims of the '121 patent are invalid as obvious in light of an additional prior art reference, the Quantel DPB 7001 Paint Box User Guide ("Paint Box User Guide"). It is my opinion that one skilled in the art would have known to combine the Paint Box User Guide with the Quantel Paint Box system or the Quantel DLS 6030 system and that these combinations disclosed all of the elements of the asserted claims of the '121 patent.

19. To the extent that a claim construction is asserted or adopted under which any of the above identified systems do not meet each element of the asserted claims, I expect to testify regarding my opinion that the asserted claims would still have been

obvious in view of a combination of prior art systems. It would have been obvious to one of ordinary skill in the art to combine the Paint Box with the Quantel DLS 6030 system to meet each element of the asserted claims. It would also have been obvious to one of ordinary skill in the art to combine the Paint Box or DLS 6030 with prepress systems such as the Hell Chromacom system.

20. I further expect to testify regarding my opinion that the applicant did not disclose certain material prior art that makes the claims of the '121 patent invalid. This art was not cumulative to the information before the U.S. Patent Office. The applicant could not have made certain arguments that it made had it disclosed this art.

21. My Initial Expert Report in this action, dated March 24, 2006, and First Supplemental Expert Report, dated April 20, 2004, summarize my opinions.

22. I am not a party to this suit, nor am I an employee of any party to this suit. I am not asserting any patent rights or other interests in this litigation.

Electronic Still Store Technology

23. I have reviewed the '121 patent in connection with my work on this case.

24. The patent characterizes the field of technology it covers. Column 1, lines 11 to 14 of the '121 patent state: "This invention relates to a digital electronic still store for broadcast television signals and more particularly to a still store providing a high speed multi-image scan or sort capability." The technology addressed by the '121 patent is the use of electronic still stores in broadcast television.

25. I am familiar with this field of technology today and I was familiar with this technology at and before the time the patent was filed in 1983. Throughout my

tenure, Quantel's business was directed primarily to products used in broadcast television. In the 1983 timeframe, television stations would use electronic still stores in the production of their news and sports programmes.

26. The first electronic still stores were developed in the mid-1970s. A still store is a system that can capture, manipulate, store, and recall television images. Television stations used still stores to store images and then later recall the images for display on television. For example, still stores were used to store and display the image that appears over the news anchor's shoulder during news broadcast.

27. Figure 1 of the '121 patent shows many of the typical components of still store systems of that time. The components shown in Figure 1 were well known at the time the application for the '121 patent was filed.

28. Figure 1 shows a "Video Input" that would have been used to capture a video signal from television. This was a common component; an electronic still store needed some form of input so that it could capture television images.

29. Figure 1 also shows an "Input A/D" which is the analog to digital converter. It converts the analog television signal to digital format so that it can be stored and manipulated electronically. This was also a common component of electronic still stores.

30. There is also a "frame store" in Figure 1. A frame store was commonly used in electronic still stores to temporarily store images for manipulation or display. A frame store was typically constructed of random access memory. Video is made up of a

series of frames, or pictures displayed thirty times per second. The "frame" of "frame store" refers to the fact that the frame store was used to store frames of video.

31. Figure 1 also shows a disk store for storing images on disk. Disks were commonly used in electronic still stores for long term storage of multiple images. After images were stored on disk, they could be recalled for display as a television image.

32. Figure 1 also shows a central processing unit ("CPU") with a user console, to control the system's functions. This is also shown in Figure 1. This was a well known component of electronic still stores and was used to control functions within the still store system.

33. It was common for electronic still stores to have a size reducer. This is also shown in Figure 1. The size reducer was a mechanism used to reduce the size of images as needed. Digitized television images are made up of small dots of data called pixels. A size reducer reduces the geometric size of an image by removing some of the pixels representing the image. For example, if it was wished to reduce the size by a factor of two, horizontally and vertically, this could be done by simply leaving out every other pixel horizontally and vertically. However, this would result in poor image quality because there would no longer be a smooth transition between the remaining pixels. And so typically, to address this problem, one might average adjoining pixels prior to the process of removing pixels.

34. Figure 1 also shows an "Output D/A." This was a common component used to convert the signal back to analog format so that it could be used in broadcast television.

35. Figure 1 also shows an "Output Processor" that prepares the image to be sent into the television studio, and a monitor for displaying images in the system. These components were well known and commonly used in electronic still stores.

36. A number of functions were accomplished by the still store system. These might have included the reduction in size of images, repositioning images, creating a browse display to aid in selecting images, and the mixing or transitioning of one image to another.

37. In the state of the television broadcast art in 1983 and earlier, it was, as the '121 patent states at column 1, lines 23-25, "common to insert a selected still store image depicting a news event in the upper left hand corner of a live studio image depicting a newscaster describing the news event." For example, ABC could use an electronic still store to pull a single image of a goal being scored in a soccer match from live video feed. The image could then be converted into digital format by the analog to digital converter and stored for later use or manipulation. ABC could use the size reducer to generate a reduced size version of the image. ABC could then store the reduced size version on disk and then recall it when needed during a news broadcast.

The Quantel Paint Box

38. The Paint Box system was first sold in the United States to The Weather Channel in Atlanta, Georgia on March 8, 1982. The Paint Box was demonstrated at the National Association of Broadcasters ("NAB") trade show in Dallas, Texas between April 4 and 7, 1982. As a result, I understand that the Paint Box is prior art to the '121 patent.

39. The Paint Box was a video graphics system used in broadcast television to, amongst other things, capture, store, create, manipulate, and recall video images. The Paint Box had all of the features of an electronic still store in addition to graphics features. An operator could create his or her own images as well as capture and store television images. The Paint Box was used by the same users as still stores, namely news and current affairs organizations for television broadcast. Some of the early Paint Box users were The Weather Channel, ABC and NBC.

40. I led the team that designed and built the Paint Box in the 1980-1982 timeframe. I was involved in all aspects of the system. I helped to design the cut and paste feature by which the system can generate reduced size images and store reduced size images. I have operated the Paint Box and I have taught customers how to operate the system. I have also helped to demonstrate the Paint Box at trade shows.

41. The cut and paste function of the Paint Box allowed the operator to generate and save reduced size images. The cut and paste function was developed in 1981. It was fully integrated into the Paint Box by January 1982 and was included in the original Paint Box system sold to The Weather Channel in March 1982.

42. During the NAB trade show in April 1982, Martin Holbrook demonstrated the Paint Box and its cut and paste functionality.

43. The browse function of the Paint Box allowed the operator to browse any images stored to disk, including full and reduced size images. The browse feature was fully integrated in the Paint Box by January 1982 and was also demonstrated at the 1982 NAB trade show.

44. The components of the Paint Box included, amongst other things, a video input, an Input A/D, a monitor, a data tablet, a computer, a Winchester disk drive, random access memory in the filter card, a size reducer and two frame stores, and an Output D/A. The simplified schematic of the Paint Box included in Defendants' Answering Brief to Ampex Corporation's Motion for Partial Summary Judgment That U.S. Patent No.4,821,121 Is Not Anticipated accurately shows these basic components as they existed in the Paint Box sold and demonstrated prior to April 8, 1982.

45. The Paint Box had a "Live Video" feature that enabled an operator to capture video feed from an external source, such as a television broadcast or a video camera. The Paint Box could capture any frame of the live video to create a still picture. The captured frame could be stored in the Paint Box's random access memory and saved to disk.

46. The Paint Box had random access memory, including at least two frame stores, random access memory in the disk data buffer, and random access memory in the filter card, each of which had the capacity to store video image data. The Paint Box frame stores and random access memory in the filter card also each had an input port to receive image data and a separate output port to transfer image data to other components.

47. The Paint Box had a Winchester disk that could store video images.

48. The Paint Box could store full size images in random access memory. The captured full size video image, for instance, would be stored in random access memory when it was captured and transferred to a frame store for display.

49. The Paint Box could store full size images to disk. The Paint Box "Save" function allowed the operator to save any picture in random access memory to the

Winchester disk. The full size image stored in the frame store could be transferred for storage to the disk.

50. The Paint Box had a size reducer that enabled the operator to generate a reduced size, lower resolution image at his option. The Paint Box's cut and paste function permitted the operator to generate a reduced size image.

51. The Paint Box could automatically generate reduced size images. If the Paint Box browse function were used to browse reduced size images that already existed on disk, it would simply transfer the reduced size images from disk to the frame store for display as part of a montage or mosaic of images. But if it were used to browse full size images that were stored on disk, it would automatically reduce the size of those images as they were pulled off disk and display them as a montage of reduced size images.

52. A reduced size image in the Paint Box could be generated from a full size image and was therefore a lower resolution, corresponding version of the full size image.

53. When full size images were browsed, the operator of the Paint Box could select a reduced size image in order to retrieve the full size version of the image.

54. The Paint Box could store reduced size images in random access memory. When the Paint Box operator used the cut and paste feature to generate a reduced size image, the reduced size image was generated and transferred from the size reducer to a frame store. The Paint Box had two frame stores so the reduced size image could be stored in a second group of random access memory locations.

55. The size reducer of the Paint Box could receive images directly from random access memory and transfer images directly to random access memory. During cut and paste the full size image was transferred from the random access memory in the

filter card directly to the size reducer. The size reducer transferred the reduced size image directly to random access memory because it sent the reduced size image directly to one of the frame stores after the image was generated.

56. The Paint Box could store reduced size images on disk. Using the cut and paste function, the operator could select the reduced size cut out image displayed on the screen and transfer it to the disk for storage.

57. When the Paint Box stored a reduced size image to disk, it used only the amount of space on the disk corresponding to the size of the reduced size image. As a result, storing a reduced size image used less storage space on the disk than a full size image.

58. The Paint Box allowed the operator to select any image for recall from the disk to random access memory for display or further editing. The operator could retrieve the full size image, the reduced size image, or multiple reduced size images.

59. The Paint Box could transfer images from disk directly to random access memory. When the operator chose to recall the full size image, it was transferred from the disk to the random access memory in the filter card. Likewise, when the operator desired to recall the reduced size image or multiple reduced size images, the images were transferred from the disk to the random access memory of the filter card.

60. Because reduced size images used less memory on the disk than full size images, amongst other reasons, they were recalled to the frame store faster than the full size images.

61. Contemporaneous documents confirm that the Paint Box could recall images more quickly than Ampex's ESS-3 still store system. For example, a 1983 book

titled "Designing for Television," indicates that the Paint Box recalled images at least 0.3 seconds faster than the ESS-3.

62. The Paint Box could store a full and a reduced size image in random access memory at the same time. The Paint Box could store a full size image in one frame store and a reduced size image in the other frame store and then display both at the same time.

63. If the Paint Box had a full size image stored in one frame store, and a reduced size image stored in the other, it could access both simultaneously for display.

64. The Paint Box browse function enabled an operator to retrieve and display up to twelve reduced size images that were stored on disk as part of one operation.

65. The Paint Box could retrieve, store, and output multiple reduced size images as a mosaic in a number of ways. The Paint Box could generate multiple reduced size images and store them to disk. The operator could then retrieve the reduced size images from disk for storage in one of the frame stores. The reduced size images could then be output for display as a mosaic. The Paint Box could also use its browse function to display up to twelve images that were stored on disk. The Paint Box could browse both full and reduced size images stored to disk. The browse of the reduced size images was faster than the browse of full size images.

66. The Paint Box computer controlled the system's functions, including the generation of reduced size images and the transfer of images.

67. Numerous documents describing the features and development of the Paint Box have been produced in this litigation. One such document is a draft brochure titled "The Paint Box: Quantel's DPB 7000 Series Digital PaintBox," that has bates

numbers EKC001018471-83. This document was created at Quantel headquarters in Newbury, England by myself and other British engineers. The date on the document, "10/3/82," is written in European format and indicates that the document was created March 10, 1982.

68. The March 10, 1982 Paint Box brochure describes, amongst other features, the ability of the Paint Box to: accept images input from an external source; generate reduced size images using cut and paste; store full and reduced size images on disk; store full and reduced size images in random access memory at the same time; browse full and reduced size images stored on disk; and retrieve a full size image by selecting the reduced size version of the image.

69. A March 22, 1982 "Preliminary Description" of the Paint Box has also been produced in this litigation. The March 22, 1982 document describes, amongst other features, the ability of the Paint Box to: generate reduced size images using cut and paste; store full and reduced size images to disk; browse images stored on disk; and select a reduced size image to retrieve the full size version of the image.

70. The Paint Box Operating and Service Manual, dated June 1984, has also been produced during this litigation. This manual describes the final version of the Paint Box that was sold in March 1982 and demonstrated at the NAB trade show in April 1982.

71. Paint Box Operating and Service Manual describes, amongst other features, the ability of the Paint Box to: transfer images from disk directly to random access memory; transfer images from random access memory directly to the size reducer and from the size reducer directly to random access memory; and store full and reduced size images in random access memory at the same time.

72. A September 16, 1981 Quantel memo titled "DPB Software Developments" describes, amongst other features, the cut and paste feature of the Paint Box and its ability to change the size of images.

73. An article I wrote for the National Electronics Review titled "The Art of Digital Techniques in the Broadcast Studio," dated October 12, 1981, describes, amongst other features, the ability of the Paint Box to: store images; recall images; and modify images prior to storage.

74. A January 13, 1982 proposal from Quantel to the BBC describes, amongst other features, the ability of the Paint Box cut and paste feature to generate reduced size images.

75. A March 2, 1982 Quantel memorandum, titled "DPB 7000 Sales Brochure," describes, amongst other features, the ability of the Paint Box cut and paste feature to generate and store cut outs.

76. An April 2, 1982 document titled "Quantel Give NY Preview of NAB Display," from the publication Backstage, describes some of the features of the Paint Box system that Quantel demonstrated at NAB '82, including the ability to re-size images.

77. A September 1982 document titled "NAB 1982 – A Post Post Mortem," from The Digital Video Report, describes some of the features of the Paint Box as demonstrated at NAB '82, including the cut and paste feature.

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79. The sales documents from the March 1982 sale of the Paint Box to The Weather Channel in Atlanta, Georgia have also been produced. These documents include a March 4, 1982 quotation to The Weather Channel and a March 8, 1982 purchase order form for the Paint Box.

80. It is my opinion that it would have been obvious to one of ordinary skill in the art to combine the Paint Box with the Quantel DLS 6030 system to meet the elements of the asserted claims. There was an explicit motivation to combine the DLS 6030 with the Paint Box. Both the Paint Box and the DLS 6030 were Quantel systems. We developed and manufactured the systems in the same time frame. It was well known at the time to use graphics and electronic still store systems together. In the Quantel lab, we connected the systems frequently in order to transfer, edit, store, and recall images. We advertised the combination of the Paint Box with the DLS systems and customers regularly used this combination. Quantel press releases and product literature from this time period refer to the use of the Paint Box in conjunction with the DLS 6030.

81. To the extent a claim construction is adopted under which the Paint Box does not meet all of the elements of the asserted claims, it is my opinion that a combination of the Paint Box with the DLS 6030 would render the asserted claims obvious.

82. It is my opinion that it would have also been obvious to one skilled in the art to combine the Paint Box with the Hell Chromacom system to meet the elements of the asserted claims. The prepress industry and the television broadcast industry have a similarity since both deal with the storage, manipulation, and display of digital images. There was an overlap in the customer base between the two industries. Several major

broadcasters were involved with prepress technology as well as broadcast technology. Thus, a person of ordinary skill in the art confronted with the problem of developing a system that stored, manipulated and displayed digital images would have looked to both prepress and television broadcast technologies for solutions.

83. To the extent a claim construction is adopted under which the Paint Box does not meet all of the elements of the asserted claims, it is my opinion that a combination of the Paint Box with the Chromacom would render the asserted claims obvious.

84. In rendering my opinion in this case, I rely on the expert of report of Dr. Dieter Preuss for a description of the features of the Hell Chromacom system. I do not rely on Dr. Preuss' report in rendering any of my opinions regarding the Paint Box or the obviousness of combining the Paint Box and the Chromacom.

85. I prepared a video of the Paint Box system that demonstrates some of the capabilities of the Paint Box in operation. I prepared the video using the original Paint Box system that was sold to The Weather Channel on March 8, 1982. A few years ago, The Weather Channel traded the original system in to us at Quantel as part of a purchase of a new Quantel system. The original system now resides in the lab at Quantel. After its sale in March 1982, and throughout the time it was in The Weather Channel's possession, this system was maintained by Quantel.

86. The system has undergone minor modifications, but none that are relevant to my analysis. For example, the text composition software was upgraded in 1987. This feature is not related to, and has no impact on, the cut and paste functionality as it relates to my analysis. The cut and paste and browse functionality demonstrated in this video

was fully functional in the Paint Box system that was sold and demonstrated in March and April 1982.

87. The video first shows each of the components of the Paint Box system: the main hardware rack, which includes the frame stores, the filter card, and the size reducer; the Winchester disc drive; the data tablet; and a monitor. We then show capturing live video from a BBC feed. The captured image is displayed on the screen when it is stored in the frame store. The image is then stored in the library (disc). We next show cutting the entire image and reducing it to quarter size using cut and paste. The reduced size image is then stored in random access memory when it is displayed. The full and reduced size images are then displayed at the same time, with the reduced size image moving around the full size image. This is possible because the reduced size image is stored in one frame store while the full size image is stored in the other frame store. We then show selecting the reduced size image and storing it to the library.

88. We then demonstrate the Paint Box browse capability. We first show it browsing full size images. This is when the system is pulling full size images off disc, automatically reducing the size of the images, and transferring them to the frame store for display. We then show browsing reduced size images of the type we just made. In this case, the Paint Box is simply transferring the reduced size images from the disc to the frame store without having to reduce the image size. It will be seen that the browse of reduced size images is much faster than the browse of full size images. This is because the reduced size image contains less data and occupies less space on the disc. It is also because when the Paint Box browses reduced size images, it is simply transferring the images from the disc to the frame store without having to reduce the image size.

89. At the end of the video, we show browsing once again. We then show that the operator can obtain the full size image by clicking on its corresponding reduced size image.

The Paint Box User Guide

90. The Paint Box User Guide is dated January 1983. It was released and distributed publicly to Paint Box customers beginning in January 1983. As a result, I understand that the Paint Box User Guide is prior art to the '121 patent.

91. The January 1983 Paint Box User Guide is the user guide for the Paint Box system that was developed between 1981 and 1982 and first sold in the United States to The Weather Channel in March 1982. It was drafted by Martin Holbrook. The January 1983 User Guide was the first User Guide for the Paint Box.

92. The User Guide discloses the input of full size video images from an external source such as a television broadcast or a video camera into the Paint Box system.

93. The User Guide discloses the ability of the Paint Box to save any picture to disk, including the full size captured image. For instance, the User Guide describes the "Save" function of the Paint Box that allowed the operator to save the full size captured image to the disk.

94. The User Guide describes the ability of the Paint Box to generate reduced size images at the user's option through the cut and paste feature. The User Guide describes that a reduced size image could be generated from a full size image.

95. The User Guide describes the ability of the Paint Box to automatically generate reduced size images by browsing full size images.

96. The User Guide describes the ability of the Paint Box to store reduced size images to disk. For example, the User Guide describes that the operator can change the size of cutouts prior to storing them on disk.

97. The User Guide discloses the ability to select to recall any image from the disk. For example, the User Guide explains that the operator of the Paint Box can use the library feature to recall any picture stored on the disk.

98. The User Guide discloses that a full size image and a reduced size image can be displayed at the same time and that the reduced size image can be moved around over the full size image. In order for this to occur, the full and reduced size images must be stored in separate frame stores.

99. The User Guide discloses the ability of the Paint Box browse feature to browse any image stored on disk, including full and reduced size images, and to display the images as a mosaic of reduced size images. The User Guide explains that the browse feature can automatically generate reduced size images.

100. The User Guide discloses that the operator could retrieve the full size version of any browsed reduced size image by selecting the reduced size image.

101. Because the User Guide describes the Paint Box system that was demonstrated and sold to The Weather Channel in March 1982, there was an explicit motivation to combine the User Guide with the Paint Box system. The combination of the User Guide with the Paint Box renders the asserted claims obvious.

102. There was also an explicit motivation to combine the Paint Box User Guide with the DLS 6030 system because, as discussed above, it was common practice to use the graphics systems, including the Paint Box, with the DLS 6030 system. The

combination of the Paint Box User Guide with the DLS 6030 renders the asserted claims obvious.

The Quantel DLS 6030

103. The DLS 6000 series systems were first sold in the United States in 1979 and were demonstrated at the NAB trade shows from 1979 through 1982. The DLS 6030 was first sold in the United States in 1981. The DLS 6030 was demonstrated at the NAB trade shows in 1981 and 1982. As a result, I understand that the DLS 6030 is prior art to the '121 patent.

104. The DLS 6030 was part of the Quantel Digital Library System series, or the DLS 6000 system series. The DLS 6030 was an electronic still store with the capability to capture, manipulate, store, retrieve, and display images. Amongst other things, it could generate and store reduced size images. It had a browse feature for browsing images stored on disk. It had a "Stack/Don't Care" function which allowed the operator to automatically apply size changes to a stack or series of images. The "Stack/Don't Care" function was used when the user needed to generate multiple reduced size images of a particular size from a series of full size images. The DLS 6030 was primarily used by news and sports organizations for television broadcasts.

105. I helped to design and build the DLS 6030. I was also present for the demonstrations of the DLS 6030 at the NAB trade shows in 1981 and 1982. At these shows, the DLS 6030's ability to capture, reduce the size of, store, recall, and browse images was demonstrated. I also contributed to the Quantel manuals that describe the

structure, function, and operation of the DLS 6030 system. The features that I describe in the analysis below were all in the system that was sold in 1981.

106. The components of the DLS 6030 included a Winchester disk, two output frame stores, a preview frame store, a disk data buffer, random access memory in the filter card, a size reducer, a microcomputer, a preview monitor, and one or two display monitors.

107. The DLS 6030 could receive full size video images from an external source such as a television broadcast or a video camera. The input full size image was stored in the preview frame store for display.

108. The DLS 6030 had random access memory, including a preview frame store, two output frame stores, a disk data buffer, and random access memory in the filter card. The random access memory in the DLS 6030 had input ports to receive image data and separate output ports to transfer image data to other components.

109. The DLS 6030 had a disk that stored video image data.

110. The DLS 6030 could store full size images in random access memory. The captured full size image was stored in the preview frame store of the DLS 6030. A full size image could also be stored in either of the output frame stores when it was recalled from the disk.

111. The DLS 6030 could store the input full size image to the Winchester disk. The full size image stored in the preview frame store could be transferred to the disk.

112. The DLS 6030 had a size reducer that enabled the operator to create a reduced size, lower resolution image at his option. To reduce the size of an image, a full size image was transferred from disk to the random access memory in the filter card, to the size reducer. The size reducer reduced the size of the image and transferred it to the preview frame store or either output frame store.

113. The DLS 6030 was capable of automatically generating reduced size images. The DLS 6030's "Stack/Don't Care" function enabled the system to automatically generate reduced size images from a series of full size images. The DLS 6030 had the ability to create a stack of pictures for display. The "Don't Care" feature allowed the system, once a particular size had been selected for the images, to apply the same size to all images in the stack. Although an article by Hugh Boyd titled "The DLS6000 – A New Digital Still Store Library System," that describes some features of the DLS 6000 series systems, and U.S. Patent No. 4,302,776, which relates to the DLS 6000 series systems, were before the United States Patent and Trademark Office ("USPTO") during prosecution of the '121 patent, neither reference disclosed the Stack/Don't Care function. The Stack/Don't Care function was not disclosed to the USPTO during prosecution of the '121 patent.

114. The reduced size image generated by the DLS 6030 could be generated from a full size image and could therefore be a corresponding lower resolution version of the full size image.

115. When the operator of the DLS 6030 stored a full size image, the image would be assigned a number. When the operator then generated a reduced size image

from the full size image, the DLS 6030 could assign the reduced size image an associated number. For instance, if the full size image were assigned the number twelve, the reduced size image could be assigned number one hundred and twelve. Assigning numbers in this fashion was standard practice when working in live television production in order to easily locate the images needed for display. Furthermore, the DLS 6030 had the ability to automatically increment assigned numbers for a sequence of full and reduced size images.

116. The DLS 6030 could store reduced size images in random access memory. When the DLS 6030 operator selected to generate a reduced size image, the reduced size image was generated and transferred from the size reducer to either the preview frame store or one of the output frame stores. As explained above, the DLS 6030 had multiple random access memory storage locations. The reduced size image could be stored in a second group of memory locations.

117. The DLS 6030 could transfer images from random access memory directly to the size reducer and from the size reducer directly to random access memory. To generate a reduced size image of an image stored on disk, the system would transfer the image from the disk, to the random access memory in the filter card, and then directly to the size reducer. After the reduced size image was generated, it was transferred directly to the preview frame store or one of the output frame stores, each of which are random access memory.

118. The DLS 6030 could store reduced size images to disk. After the reduced size image was generated, and stored in a frame store, the reduced size image could be

transferred, along with the remainder of the image frame, to the disk. Unlike the Paint Box and the AVA, the DLS 6030 could not store the reduced size image to disk using only the memory corresponding to the reduced size image.

119. The DLS 6030 allowed the operator to select any image for recall from the disk to random access memory in order to display the image or edit it further. The operator could retrieve the full size image, the reduced size image, or multiple reduced size images. When the operator chose to recall the full size image, it was transferred from the disk to one of the frame stores. When the operator desired to recall the reduced size image or multiple reduced size images, the images were transferred from the disk to one of the frame stores.

120. The DLS 6030 could transfer images from the disk directly to random access memory. When an image was retrieved from the disk, it was transferred directly to the disk data buffer, which is random access memory.

121. The DLS 6030 could store a full and a reduced size image in random access memory at the same time. A full size image could be in one frame store while the reduced size image was in another other frame store. Alternatively, a full size image could be in one of the frame stores, while the reduced size image was in the disk data buffer.

122. The DLS 6030 could access images a full and a reduced size image simultaneously. For example, if there were a full size image in one output frame store and a reduced size image in the other output frame store, the DLS 6030 could access both at the same time for display.

123. The DLS 6030 "browse" function enabled an operator to display sixteen or twenty-five reduced size images as part of one operation.

124. The DLS 6030 could retrieve, store, and output multiple reduced size images as a mosaic. The DLS 6030 could generate multiple reduced size images and save them to disk. The DLS 6030 could then retrieve the reduced size images for storage in random access memory and could then display the reduced size images.

125. The DLS 6030 computer controlled the system's functions, including the creation of reduced size images and the transfer of images.

126. Numerous documents describing the DLS 6000 series systems have been produced during this litigation. For instance, a March 16, 1981 document titled "Preliminary Description: The DLS 6000 Series Digital Library System," describes, amongst other features, the ability of the DLS 6000 series systems to: display multiple images; store images in random access memory; store images on disk; recall images from disk; generate reduced size images; and store reduced size images to disk.

127. A March 1, 1980 document titled "The DLS 6000 Digital Library System – A Preliminary Description," describes, amongst other features, the ability to: accept images input from an external source; store full size images in random access memory and on disk; recall images from disk; generate reduced size images; and browse images.

128. A November 1982 "DLS 6000 Service Manual" describes, amongst other features, the ability to: store multiple images in the frames stores at once; transfer images from disk directly to random access memory; and transfer images from random access

memory directly to the size reducer and from the size reducer directly to random access memory.

129. A document titled "DLS 6000/1 Operating Instructions," dated 1983, describes, amongst other features, the ability to automatically generate reduced size images through the "Stack/Don't Care" feature.

130. It is my opinion that it would have been obvious to one of ordinary skill in the art to combine the DLS 6030 with the Paint Box to meet the elements of the asserted claims. There was an explicit motivation to combine the DLS 6030 with the Paint Box. Both the Paint Box and the DLS 6030 were Quantel systems. We developed and manufactured the systems in the same time frame. It was well known at the time to use graphics and electronic still store systems together. In the Quantel lab, we connected the systems frequently in order to transfer, edit, store, and recall images. We advertised the combination of the Paint Box with the DLS systems and customers regularly used this combination. Quantel press releases and product literature from this time period refer to the use of the Paint Box in conjunction with the DLS 6030.

131. To the extent a claim construction is adopted under which the DLS 6030 does not meet all of the elements of the asserted claims, it is my opinion that a combination of the Paint Box with the DLS 6030 would render the asserted claims obvious.

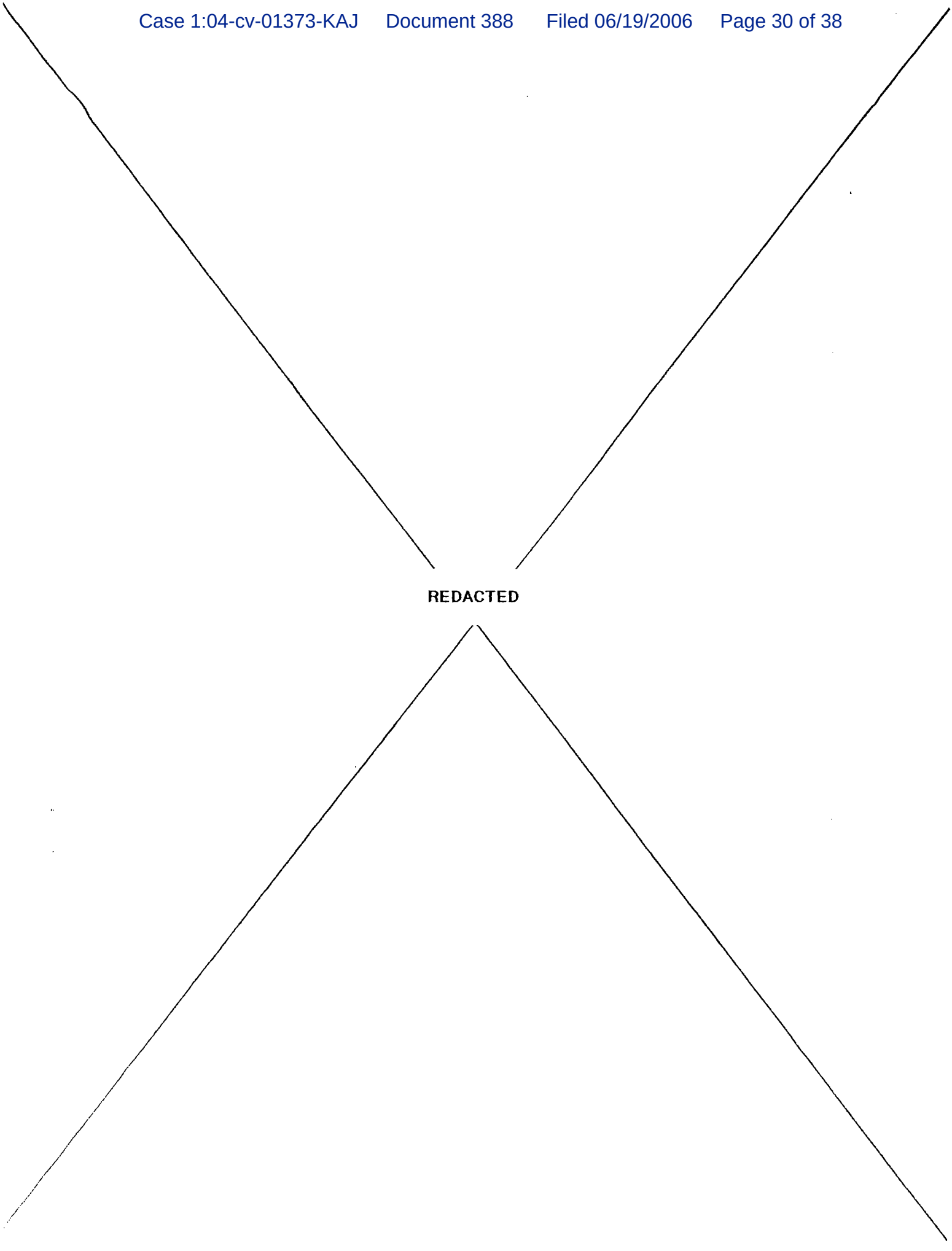
The Ampex AVA System

132. The AVA system was first sold in the United States in 1980 to CBS in New York. The AVA was demonstrated at the 1980 NAB trade show. As a result, I understand the AVA is prior art to the '121 patent.

133. The AVA was a video graphics system used in broadcast television to, amongst other things, capture, create, manipulate, store, and recall video images. The AVA had the features of an electronic still store as well as graphics features. An operator could create his or her own images as well as capture and store television images. The AVA was designed for use by news organizations for television broadcasts.

134. In the early 1980s, I learned about the AVA system by observing it at trade shows and reviewing articles and other literature relating to the system.

135. For purposes of this case, I had access to documents that confirmed my recollection and understanding of the AVA's capabilities. Specifically, amongst other materials, I studied a 1980 AVA Operator's Manual; a 1981 AVA article by Junaid Sheikh, a former Ampex employee who worked on the AVA and submitted written rebuttal testimony for Ampex during the ITC trial; a 1980 AVA article by Larry Evans and Ken Regnier; a 1981 AVA Service Manual; Ampex weekly reports describing the AVA; AVA engineering notes by some of the Ampex engineers who worked on the AVA; the deposition transcript of Leslie Oxley, Ampex's corporate designee on the features and functions of the AVA; the deposition and trial testimony of Junaid Sheikh; the deposition of Larry Evans, the former Ampex lead project engineer who designed the AVA; the deposition of William Lindemann, another former Ampex engineer who worked on the AVA; and the deposition of Joel Talcott, Ampex's general counsel.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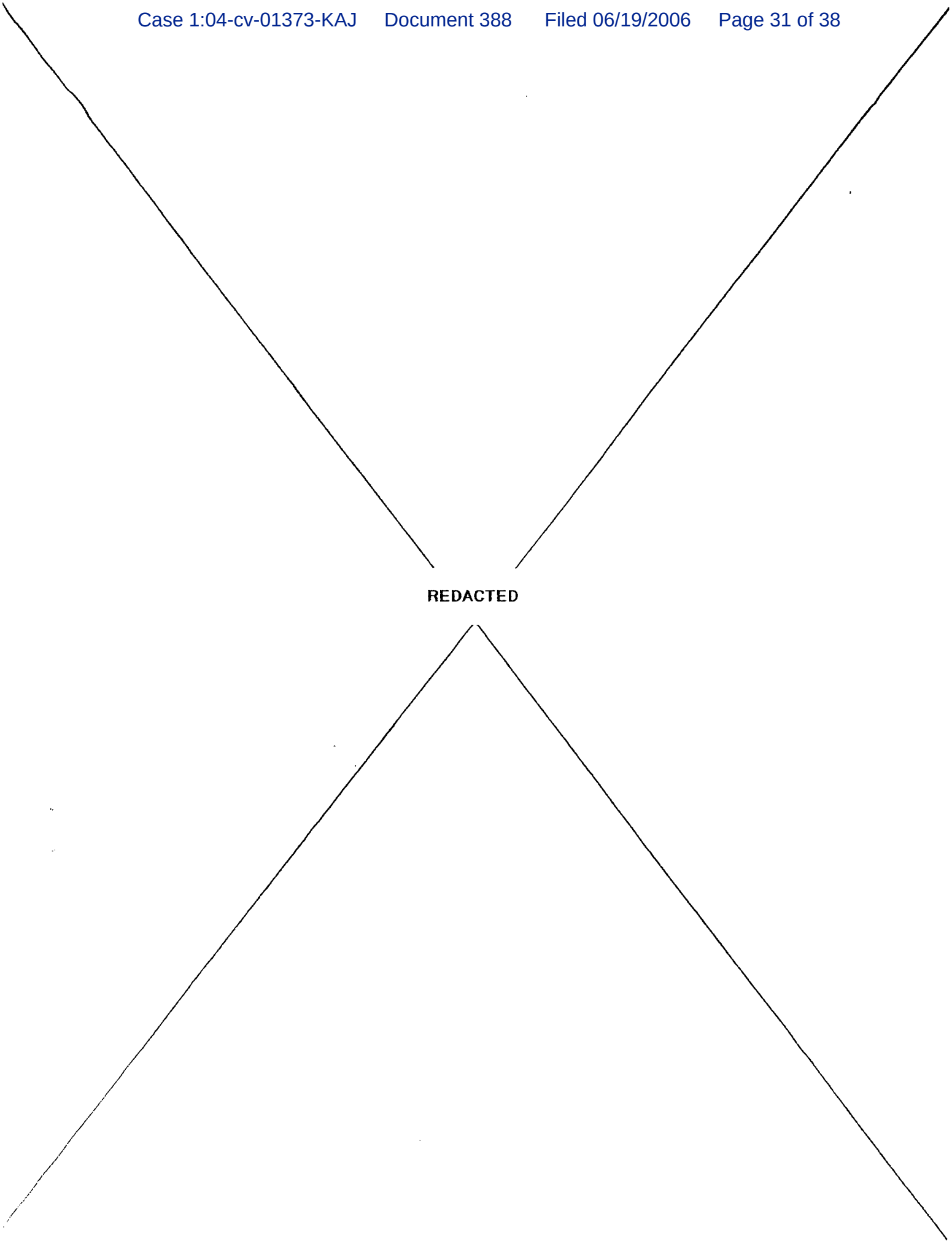
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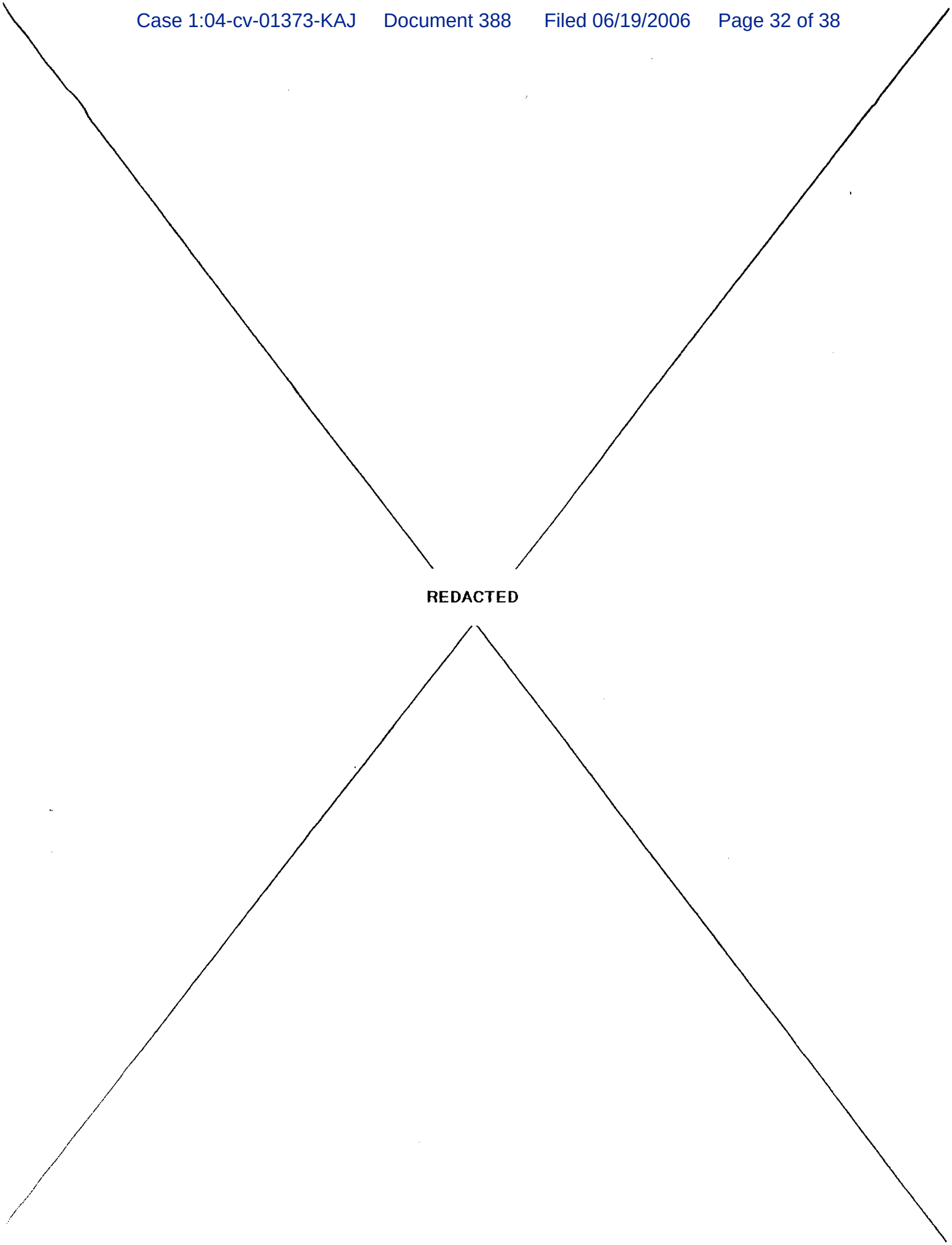
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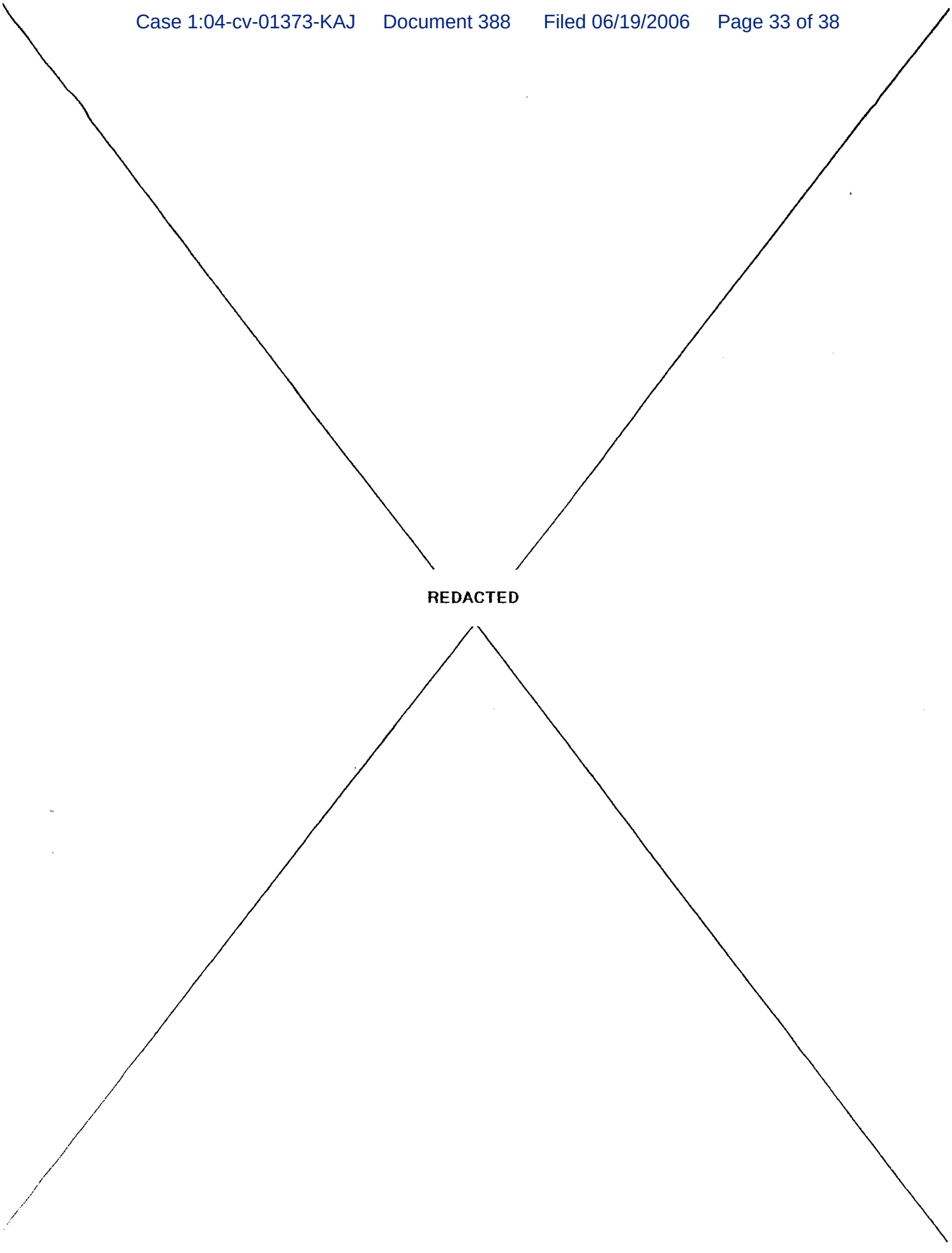
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158. A number of references describing the features of the AVA system as sold and demonstrated prior to April 8, 1982 have been produced in this litigation. An article by Junaid Sheikh titled "Ampex AVA Video Art System," published in Video in January 1981, describes, amongst other features, the ability of the AVA to transfer images from disk directly to random access memory.

159. An article by Larry Evans and Ken Regnier, titled "Practical Computer Graphics For Television," from Ampex Horizons in 1980, describes, amongst other features, the ability of the AVA to transfer images from disk directly to random access memory.

160. A September 1980 document titled "Ampex Video Art System: Operator's Manual," describes, amongst other features, the ability of the AVA to accept input images from an external source; store input images in random access memory and on disk; generate reduced size images; store reduced size images in random access memory and on disk; and recall images from disk.

161. U.S. Patent No. 4,564,915 ("the '915 patent"), which relates to the AVA, describes, amongst other features, the ability to transfer images from disk directly to the frame store.

162. A manual for the computer used in the AVA system, titled "PDP 11 Processor Handbook," and dated 1978, describes the ability of the random access memory associated with the computer to store image data.

163. An Ampex "AVA Service Manual" dated October 1981, describes, amongst other things, the storage capacity of the random access memory in the AVA computer.

Ampex's Failure to Disclose Material and Non-Cumulative Prior Art to the Patent Office.

164. I understand that during the prosecution of the '121 patent, U.S. Patent No. 4,172,264 ("the '264 patent") and U.S. Patent No. 4,302,776 ("the '776 patent") were disclosed to the USPTO. I further understand that the Examiner located an article by Hugh Boyd ("the Boyd reference") titled "The DLS6000 – A New Digital Still Store Library System."

165. I am the named inventor on the '264 patent. The '264 patent relates to a synchronizer that can generate reduced size images on-the-fly and position the images in a frame store.

166. The '264 patent does not disclose disk storage. Therefore, the '264 patent does not disclose the direct transfer of images from disk to random access memory or the storage of a reduced size image to disk using only the memory corresponding to the size of the reduced size image.

167. The '264 patent does not disclose the storage of a full and a reduced size image in random access memory at the same time.

168. The Boyd reference describes some of the components of the DLS 6000 series systems, including its multiple frame stores, a size reducer, and disk storage. The Boyd reference does not describe all of the capabilities of the DLS 6000 series systems, including the DLS 6030 system.

169. The Boyd reference does not disclose the direct transfer of images from disk to random access memory.

170. The Boyd reference does not disclose the storage of a reduced size image to disk using just the memory corresponding to the reduced size image. Instead, the Boyd reference discloses the ability of the DLS 6000 series systems to store reduced size images to disk with the full image frame.

171. I am the named inventor of the '776 patent. The '776 patent relates to the DLS 6000 series systems. It describes some but not all of the features of the DLS 6000 series systems.

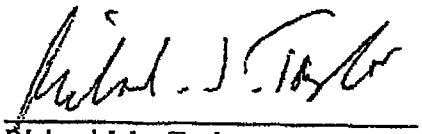
172. During my April 28, 2006 deposition I did not indicate that the '776 patent disclosed the storage of a reduced size image to disk using only the memory corresponding to the reduced size image. Rather, I stated that the '776 patent discloses, in Figure 19, that the size reducer can be placed before the disk. Even under this configuration, the patent teaches the storage of a reduced size image to disk using the full size frame, consistent with the abilities of the DLS 6000 series systems.

173. The AVA was not disclosed to the USPTO during the prosecution of the '121 patent.

174. The Paint Box was not disclosed to the USPTO during the prosecution of the application that issued as the '121 patent.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on June 13, 2006, in Newbury, England.



Richard John Taylor

CERTIFICATE OF SERVICE

I hereby certify that on June 19, 2006, I electronically filed the Redacted Declaration of Richard John Taylor in Support of Defendants' Answering Briefs to Ampex Corporation's Motions for Summary Judgment with the Clerk of the Court using CM/ECF which will send notification of such filing to the following:

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